Unit 2 Functions

1	A function is said to be _____ if and only if f(a) = f(b) implies that a = b for all a and b in the domain of f.			
	a) One-to-many	b) One-to-one	c) Many-to-many	d) Many-to-one
2	The function f(x)=x+1 from the set of integers to itself is onto. Is it True or False?			
	a) True	b) False		
3	Which of the following function f: Z X Z → Z is not onto?			
	a) f(a, b) = a + b	b) f(a, b) = a	c) f(a, b) = |b|	d) f(a, b) = a – b
4	The domain of the function that assign to each pair of integers the maximum of these two integers is _____			
	a) N	b) Z	c) Z^+	d) $Z^+ X Z^+$
5	Let f and g be the function from the set of integers to itself, defined by f(x) = 2x + 1 and g(x) = 3x + 4. Then the composition of f and g is _____			
	a) 6x + 9	b) 6x + 7	c) 6x + 6	d) 6x + 8
6	The inverse of function $f(x) = x^3 + 2$ is _____			
	a) $f^{-1}(y) = (y – 2)^{1/2}$	b) $f^{-1}(y) = (y – 2)^{1/3}$	c) $f^{-1}(y) = (y)^{1/3}$	d) $f^{-1}(y) = (y – 2)$
7	The function $f(x) = x^3$ is bijection from R to R. Is it True or False?			
	a) True	b) False		
8	A function or mapping (Defined as f:X->Y) is a relationship from elements of one set X to elements of another set Y, then X is called?			
	a) Codomain	b) pre-image	c) Domain	d) image of function
9	A function can not be?			
	a) one to one	b) many to one	c) one to many.	d) All of the above
10	f:N->N,f(x)=5x is?			
	a) injective	b) not injective	c) surjective	d) inverse
11	If f and g are onto then the function (gof) is?			
	a) one to one	b) onto	c) one to many.	d) into
12	Let f and g be the function from the set of integers to itself, defined by f(x) = 2x + 1 and g(x) = 3x + 4. Then the composition of f and g is _____			
	a) 6x+9	b) 6x+7	c) 6x+3	d) 6x+8
13	which of the following is true?			
	a) The function f(x) = x^3 is bijection from R to R.			
	b) The function f(x)=x+1 from the set of integers to itself is onto.			
	c) Both A and B			
	d) None of the above			
14	If $f(x) = x^2 + 4$ then range of f(x) is given by?			
	a) [4, ∞)	b) (-∞, ∞) – {0}	c) (0, ∞)	d) None of the mentioned
15	The $g^{-1}(\{0\})$ for the function g(x)= ⌊x⌋ is _____			
	a) {x | 0 ≤ x < 1}	b) {x | 0 < x ≤ 1}	c) {x | 0 < x < 1}	d) {x | 0 ≤ x ≤ 1}

16	If f is a function defined from R to R, is given by f(x) = 3x – 5 then $f^{-1}(x)$ is given by _____			
	a) 1/(3x-5)	b) (x+5)/3	c) does not exist since it is not a bijection	d) none of all
17	The solution to f(x) = $f^{-1}(x)$ are _____			
	a) no solutions in any case	b) same as solution to f(x) = x	c) infinite number of solution for every case	d) none of the mentioned
18	Composition does not hold?			
	a) associative property	b) commutative property	c) one-to-one function	d) Both A and B
19	If f(x)=x(x+1)(2x+1) then f(x)-f(x-1)=_____			
	a)$-6x^2$	b)$6x^2$	c)$-6x^3$	d)$6x^3$
20	Codomain is the subset of range.			
	a) True	b) False		